

Statistics: Lecture 0 - Administration

Jan Bauer

jan.bauer@dhbw-mannheim.de

18.11.19

About me:

- Mathematics-Economics M.Sc (Københavns Universitet, 2017)
- Research Assistant (PhD Student) at the chair of Management (JGU Mainz, 2018)
- Research Assistant (PhD Student) at the chair of Business Informatics (DHBW, 2019)
- Research interests: (Time Series) Econometrics, Macroeconometrics & passion for everything statistic-ish

About you:

- Solid background in set theory, matrix algebra & limit theory
 - Python coding skills (presumably more than I have)
 - Recap the lecture to not loose track
 - Looking for typos (thank you)
 - In-lecture-feedback (pace, difficulty,...)
-
- Caution: The module is going to be a tough one

About the lecture:

Base

- Analysis & Linear Algebra

Now

STATISTICS

Future

- Computer Science
 - Machine Learning
 - Data Analysis
- Even more Statistics/Probability Theory/Econometrics
 - Crazy math stuff that will certainly not impress anyone on a party
- (Applied) Econometrics
 - Macroeconometrics
 - Microeconometrics
 - Financial Econometrics

About the lecture:

- 1 Probability Theory & Random Variables
- 2 Random Variables and (Discrete) Probability Distributions
- 3 (Continuous) Probability Distributions & Bivariate Extensions
- 4 Covariance & Correlation and Introduction to Statistics
- 5 Estimation
- 6 Hypothesis Test
- 7 Hypothesis Test
- 8 Assignment 1
- 9 Linear Regression
- 10 Multivariate Linear Regression
- 11 Assignment 2
- 12 Time Dependent Data
- 13 Analysis of Variance & Experimental Designs
- 14 Assignment 3

Administrative Things

- Lecture times: Two times a week (as regular as possible)
- Slides: <https://github.com/JanBauerDHBW/StatisticsDSA18DSB18>
- 14 lectures of 90min each
- Three Assignments (bonus points for exam)
- Exam
- Sources:
 - Lecture Notes
 - Fundamentals of Probability and Statistics for Engineers (Soong, 2004)
 - Introduction to Econometrics (Stock & Watson, 2015, 3rd)
 - Probability and Mathematical Statistics - An Introduction (Lukacs, 1972)
 - Statistics for Business and Economics (Newbold, Carlson & Thorne)
- Questions? E-mail me!

- Date (?)
- 60 minutes & 30 questions
- Aids: Open book exam & non-programming calculator
- Multiple choice (Y/N)
- +1 point for a correct answer, -1 for a wrong one (0 for blanc)
- **Relevant topics:** Everything discussed in **lecture** and in the **Assignments** (especially the coding part!)

Assignments

- Three Assignments
- Theory & coding Part
- Bonus points: 2, 1.5, 1, 0.5 or 0 each assignment

~> maximum of 6 points

- Solutions will be provided during lecture

Assignments Organisation

- Hand in in groups of 3-5 (group name & student numbers)
- Hand in **during/right after** lecture when it is due
- Submission: code → e-mail (subject: Assignment X Statistics - Group Name)
rest → during/after lecture

Assignment	Upload	Submission	Parts covered
Assignment #1	27.11.19	11.12.19	Theory
Assignment #2	11.12.19	08.01.20	Theory & Coding
Assignment #3	08.01.20	22.01.20	Theory & Coding

- Theory part: Printed Assignment containing your answers
- Coding part:
 - Code file (e-mail)
 - copy code + code output (e.g. into Word) (printed)

- Exam: 30 questions. Passing: 15 points (4.0). Best grade: 30 points (1.0)
- Maximum failure ratio: 40% (otherwise points will be adjusted)
- Bonus points are added to your exam points.
 - Example: Got 6 bonus points and achieve 9 points in exam
 $\rightsquigarrow 9 + 6 = 15 \rightsquigarrow 4.0$
 - Example: Got 4 bonus points and achieve 26 points in exam
 $\rightsquigarrow 26 + 4 = 30 \rightsquigarrow 1.0$

- Time of attendance: 28h (14·90min)
- Self-study: 47h
 - 32h assignments & lecture recap
 - 15h exam preparation

Before we start: Survey

- height (cm)
- size of shoe
- distance from "home" to DHBW (km)
- gender (f/m)